Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

# General

## Title

Eye care: percentage of patients aged 18 years and older with a diagnosis of diabetic retinopathy who had a dilated macular or fundus exam performed which included documentation of the level of severity of retinopathy AND the presence or absence of macular edema during one or more office visits within 12 months.

## Source(s)

American Medical Association-convened Physician Consortium for Performance ImprovementÂ® (PCPIÂ®), American Academy of Ophthalmology. Eye care I and II performance measurement sets. Chicago (IL): American Medical Association (AMA); 2015 Aug. 55 p.

# Measure Domain

## Primary Measure Domain

Clinical Quality Measures: Process

## Secondary Measure Domain

Does not apply to this measure

# Brief Abstract

## Description

This measure is used to assess the percentage of patients aged 18 years and older with a diagnosis of diabetic retinopathy who had a dilated macular or fundus exam performed which included documentation of the level of severity of retinopathy AND the presence or absence of macular edema during one or more office visits within 12 months.

## Rationale

Diabetic retinopathy is a leading cause of new cases of legal blindness among working-age Americans and represents a leading cause of blindness in this age group worldwide (Klein, 2007).

Ensuring timely treatment that could prevent blindness due to diabetes requires the performance and

documentation of key examination parameters. The documented level of severity of retinopathy and the documented presence or absence of macular edema assists with the on-going plan of care for the patient with diabetic retinopathy.

The following clinical recommendation statement is quoted verbatim from the referenced clinical guidelines and represents the evidence base for the measure:

Because treatment is effective in reducing the risk of visual loss, detailed examination is indicated to assess for the following features that often lead to visual impairment: presence of macular edema, optic nerve neovascularization and/or neovascularization elsewhere, signs of severe nonproliferative diabetic retinopathy (NPDR) (extensive retinal hemorrhages/microaneurysms, venous beading, and intraretinal microvascular abnormalities [IRMA]), and vitreous or preretinal hemorrhage (American Academy of Ophthalmology Retina/Vitreous Panel, 2014).

## Evidence for Rationale


American Academy of Ophthalmology Retina/Vitreous Panel. Diabetic retinopathy. San Francisco (CA): American Academy of Ophthalmology; 2014.

American Medical Association-convened Physician Consortium for Performance ImprovementÂ® (PCPIÂ®), American Academy of Ophthalmology. Eye care I and II performance measurement sets. Chicago (IL): American Medical Association (AMA); 2015 Aug. 55 p.

Klein BE. Overview of epidemiologic studies of diabetic retinopathy. Ophthalmic Epidemiol. 2007 Jul-Aug;14(4):179-83. PubMed


## Primary Health Components

Diabetic retinopathy; severity of retinopathy; macular edema; dilated macular or fundus exam

## Denominator Description

All patients aged 18 years and older with a diagnosis of diabetic retinopathy (see the related "Denominator Inclusions/Exclusions" field)

## Numerator Description

Patients who had a dilated macular or fundus exam performed which included documentation of the level of severity of retinopathy AND the presence or absence of macular edema during one or more office visits within 12 months (see the related "Numerator Inclusions/Exclusions" field)

# Evidence Supporting the Measure

## Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

## Additional Information Supporting Need for the Measure

Opportunity for Improvement

Rates of eye examinations for elderly persons with diabetes mellitus (DM) or frequently occurring eye diseases, especially for DM, remain far below recommended levels in a nationally representative sample of persons with health insurance coverage (Sloan, Yashkin, & Chen, 2014). Several factors, including limited physical and cognitive function and greater distance to an ophthalmologist, but not health insurance coverage, account for variation in regular use. Although effective treatment is available, fewer patients with diabetes are referred by their primary care physicians for ophthalmic care than would be expected according to guidelines by the American Diabetes Association and the American Academy of Ophthalmology (Kraft et al., 1997). In two community-based studies, 43% to 65% of participants had not received a dilated eye examination at the time of enrollment (Paz et al., 2006).

## Evidence for Additional Information Supporting Need for the Measure


American Medical Association-convened Physician Consortium for Performance ImprovementÂ® (PCPIÂ®), American Academy of Ophthalmology. Eye care I and II performance measurement sets. Chicago (IL): American Medical Association (AMA); 2015 Aug. 55 p.

Kraft SK, Marrero DG, Lazaridis EN, Fineberg N, Qiu C, Clark CM. Primary care physicians' practice patterns and diabetic retinopathy. Current levels of care. Arch Fam Med. 1997 Jan-Feb;6(1):29-37. PubMed

Paz SH, Varma R, Klein R, Wu J, Azen SP, Los Angeles Latino Eye Study Group. Noncompliance with vision care guidelines in Latinos with type 2 diabetes mellitus: the Los Angeles Latino Eye Study. Ophthalmology. 2006 Aug;113(8):1372-7. PubMed

Sloan FA, Yashkin AP, Chen Y. Gaps in receipt of regular eye examinations among Medicare beneficiaries diagnosed with diabetes or chronic eye diseases. Ophthalmology. 2014 Dec;121(12):2452-60. PubMed


## Extent of Measure Testing

The American Medical Association (AMA)-convened Physician Consortium for Performance Improvement (PCPI) collaborated on several measure testing projects in 2012, 2013 and 2015 to ensure the Primary Open-Angle Glaucoma Optic Nerve Evaluation, Diabetic Retinopathy – Documentation of Presence or Absence of Macular Edema and Diabetic Retinopathy – Communication with the Physician Managing Ongoing Diabetes Care measures are reliable and evaluated for accuracy of the measure numerator, denominator and exception case identification. The testing projects were conducted utilizing electronic health record data and registry data. Parallel forms reliability and signal-to-noise reliability was tested.

One site participated in the parallel forms testing of the Diabetic Retinopathy – Documentation of Presence or Absence of Macular Edema measure. Site A was a physician-owned private practice with one ophthalmologist.

Signal-to-noise reliability was assessed using 2013 data acquired from the Centers for Medicare & Medicaid Services Physician Quality Reporting System Group Practice Reporting Option (GPRO) database.

Diabetic Retinopathy – Documentation of Presence or Absence of Macular Edema

Parallel Forms Reliability Testing (Site A)

There were 155 observations from one site used for the denominator analysis. The kappa statistic value was found to be non-calculable resulting from the inability to divide by zero in the statistic formula when

only one response was used.

Of the 155 observations that were initially selected, 155 observations met the criteria for inclusion in the numerator analysis. The kappa statistic value of 0.76 demonstrates substantial agreement between the automated report and reviewer.

Reliability: N, % Agreement, Kappa (95% Confidence Interval)
Denominator: 155, 100.0%, Non-Calculable* (Non-Calculable, Non-Calculable)**
Numerator: 155, 96.1%, 0.76 (0.58, 0.95)
Exception: 155, 100.0%, Non-Calculable* (Non-Calculable, Non-Calculable)**

*Cannot calculate kappa statistics when only one response (Yes/Yes) was used, as this causes a divide-by-zero error in the statistic formula.

**This is an example of the limitation of the Kappa statistic. While the agreement can be 90% or greater, if one classification category dominates, the Kappa can be significantly reduced.

Signal-to-Noise Reliability Testing

For this measure, the reliability at the minimum level of quality reporting events (10) was 0.86. The average number of quality reporting events for physicians included is 76.8. The reliability at the average number of quality reporting events was 0.98.

This measure has high reliability when evaluated at the minimum level of quality reporting events and high reliability at the average number of quality events.

### Evidence for Extent of Measure Testing

American Medical Association-convened Physician Consortium for Performance ImprovementÂ® (PCPIÂ®), American Academy of Ophthalmology. Eye care I and II performance measurement sets. Chicago (IL): American Medical Association (AMA); 2015 Aug. 55 p.

## State of Use of the Measure

### State of Use

Current routine use

### Current Use

not defined yet

## Application of the Measure in its Current Use

### Measurement Setting

Ambulatory/Office-based Care

Long-term Care Facilities - Other

Skilled Nursing Facilities/Nursing Homes

### Professionals Involved in Delivery of Health Services

not defined yet

### Least Aggregated Level of Services Delivery Addressed

Individual Clinicians or Public Health Professionals

### Statement of Acceptable Minimum Sample Size

Unspecified

### Target Population Age

Age greater than or equal to 18 years

### Target Population Gender

Either male or female

## National Strategy for Quality Improvement in Health Care

### National Quality Strategy Aim

Better Care

### National Quality Strategy Priority

Prevention and Treatment of Leading Causes of Mortality

## Institute of Medicine (IOM) National Health Care Quality Report Categories

### IOM Care Need

Living with Illness

### IOM Domain

Effectiveness

## Data Collection for the Measure

### Case Finding Period

Unspecified

## Denominator Sampling Frame

Patients associated with provider

## Denominator (Index) Event or Characteristic

Clinical Condition

Patient/Individual (Consumer) Characteristic

## Denominator Time Window

not defined yet

## Denominator Inclusions/Exclusions

Inclusions
All patients aged 18 years and older with a diagnosis of diabetic retinopathy

Note: Refer to the original measure documentation for administrative codes.

Exclusions
None

Exceptions

> Documentation of medical reason(s) for not performing a dilated macular or fundus examination
> Documentation of patient reason(s) for not performing a dilated macular or fundus examination

## Exclusions/Exceptions

not defined yet

## Numerator Inclusions/Exclusions

Inclusions
Patients who had a dilated macular or fundus exam performed which included documentation of the level of severity of retinopathy AND the presence or absence of macular edema during one or more office visits within 12 months

Note: Refer to the original measure documentation for administrative codes.

Note:

> *Documentation*: The medical record must include: documentation of the level of severity of retinopathy AND documentation of whether macular edema was present or absent.
> *Severity of Retinopathy*: Mild nonproliferative, moderate nonproliferative, severe nonproliferative, very severe nonproliferative, proliferative.
> *Macular Edema*: Acceptable synonyms for macular edema include: macular thickening, intraretinal thickening, serous detachment of the retina, or pigment epithelial detachment.

Exclusions
Unspecified

### Numerator Search Strategy

Fixed time period or point in time

### Data Source

Administrative clinical data

Electronic health/medical record

Registry data

### Type of Health State

Does not apply to this measure

### Instruments Used and/or Associated with the Measure

Unspecified

## Computation of the Measure

### Measure Specifies Disaggregation

Does not apply to this measure

### Scoring

Rate/Proportion

### Interpretation of Score

Desired value is a higher score

### Allowance for Patient or Population Factors

not defined yet

### Standard of Comparison

not defined yet

## Identifying Information

### Original Title

Measure #7: diabetic retinopathy: documentation of presence or absence of macular edema and level of severity of retinopathy.

## Measure Collection Name

AMA/PCPI Eye Care I and II Performance Measurement Set

## Submitter

American Medical Association - Medical Specialty Society

## Developer

American Academy of Ophthalmology - Medical Specialty Society

Physician Consortium for Performance ImprovementÂ® - Clinical Specialty Collaboration

## Funding Source(s)

Unspecified

## Composition of the Group that Developed the Measure

Eye Care I Measure Development Work Group*

Work Group Members

Paul P. Lee, MD, JD (*Co-chair*) (ophthalmologist)
Jinnet B. Fowles, PhD (*Co-chair*) (methodologist)
Richard L. Abbott, MD (ophthalmologist)
Lloyd P. Aiello, MD, PhD (ophthalmologist)
Priscilla P. Arnold, MD (ophthalmologist)
Richard Hellman, MD, FACP, FACE (endocrinologist)
Leon W. Herndon, MD (ophthalmologist)
Kenneth J. Hoffer, MD (ophthalmologist)
Jeffrey S. Karlik, MD (ophthalmologist)
Mathew MacCumber, MD (ophthalmologist)
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James L. Rosenzweig, MD, FACE (endocrinologist)
Sam J. W. Romeo, MD, MBA (family practice)
John T. Thompson, MD (ophthalmologist)

Work Group Staff

*American Academy of Ophthalmology*: Flora Lum, MD

*Facilitators*: Timothy F. Kresowik, MD; Rebecca A. Kresowik

*Health Plan Representative*: Andrea Gelzer, MD MS FACP

*National Committee for Quality Assurance*: Donna Pillittere

*American Medical Association (AMA)-convened Physician Consortium for Performance Improvement®(PCPI®)*: Karen S. Kmetik, PhD; Heidi Bossley, MSN, MBA; Stephen Havas, MD, MPH, MS

*The composition and affiliations of the work group members are listed as originally convened in 2006 and are not up to date.

## Financial Disclosures/Other Potential Conflicts of Interest

Conflicts, if any, are disclosed in accordance with the Physician Consortium for Performance Improvement® conflict of interest policy.

## Endorser

National Quality Forum - None

## NQF Number

not defined yet

## Date of Endorsement

2015 Nov 4

## Measure Initiative(s)

Physician Quality Reporting System

## Adaptation

This measure was not adapted from another source.

## Date of Most Current Version in NQMC

2015 Aug

## Measure Maintenance

Unspecified

## Date of Next Anticipated Revision

Unspecified

## Measure Status

This is the current release of the measure.

This measure updates a previous version: American Academy of Ophthalmology, Physician Consortium for Performance Improvement®, National Committee for Quality Assurance. Eye care I physician performance measurement set. Chicago (IL): American Medical Association (AMA); 2010 Sep. 12 p.

## Measure Availability

Source available from the American Medical Association (AMA)-convened Physician Consortium for Performance Improvement® Web site .

For more information, contact AMA at 330 N. Wabash Avenue Suite 39300, Chicago, Ill. 60611; Phone: 312-800-621-8335; Fax: 312-464-5706; E-mail: cqi@ama-assn.org.

## NQMC Status

This NQMC summary was completed by ECRI Institute on February 11, 2008. The information was verified by the measure developer on April 14, 2008.

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## Copyright Statement



# Production

## Source(s)

American Medical Association-convened Physician Consortium for Performance ImprovementÂ® (PCPIÂ®), American Academy of Ophthalmology. Eye care I and II performance measurement sets. Chicago (IL): American Medical Association (AMA); 2015 Aug. 55 p.

# Disclaimer

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